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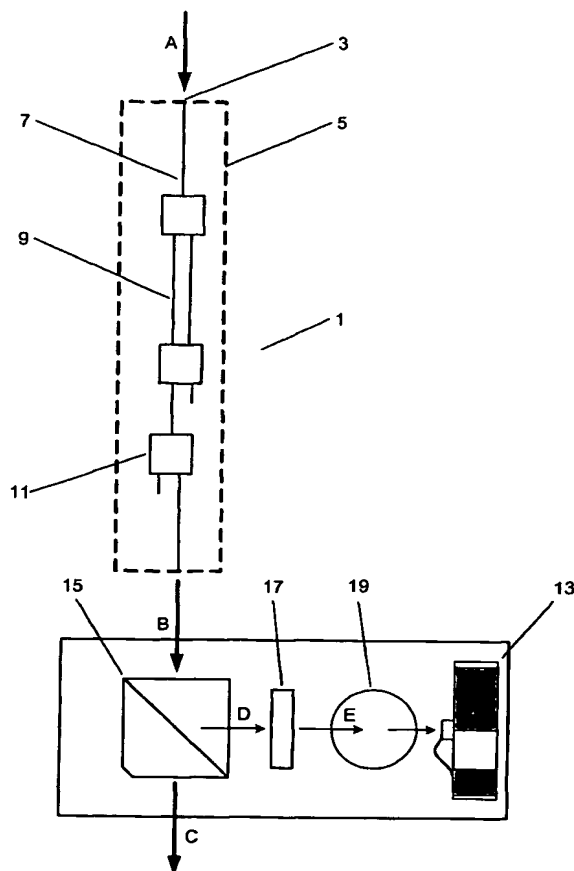
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[Continued on next page]

(54) Title: OPTICAL COMMUNICATIONS APPARATUS



(57) Abstract: An Optical communications apparatus, comprising: (a) an optical integrated device comprising an input, one or more integrated optical component(s) and an output, arranged such that light received by the input is propagated by the optical component(s) and exits the device as an output light beam; (b) a light beam diverter arranged to divert a sample portion only of the power of the output light beam; (c) a light detector arranged to detect the sample portion of the output light beam; and (d) a polariser located between the light beam diverter and the light detector and/or between the output of the optical integrated device and the light beam diverter, the polariser being arranged such that if light of a predetermined polarisation is received by the optical integrated device, the polariser propagates light of that polarisation only, thereby substantially to prevent light other than of the predetermined polarisation being detected by the light detector.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04B10/155

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 473 457 A (ONO TAKASHI) 5 December 1995 (1995-12-05) abstract; figure 1	1,3
A	US 6 317 249 B1 (NAITO TAKAO ET AL) 13 November 2001 (2001-11-13) figure 1	1,3
A	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 06, 30 April 1998 (1998-04-30) & JP 10 032542 A (YUSEISHO TSUSHIN SOGO KENKYUSHO), 3 February 1998 (1998-02-03) abstract	1,3
A	US 5 818 857 A (PALMER JAMES R) 6 October 1998 (1998-10-06) the whole document	1,3

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☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 5473457	A	05-12-1995	JP	2739813 B2		15-04-1998
			JP	7177088 A		14-07-1995
US 6317249	B1	13-11-2001	JP	2000171766 A		23-06-2000
JP 10032542	A	03-02-1998	JP	3079249 B2		21-08-2000
US 5818857	A	06-10-1998	AU	723599 B2		31-08-2000
			AU	6183998 A		22-09-1998
			BR	9815455 A		23-10-2001
			CA	2281776 A1		11-09-1998
			CN	1249857 T		05-04-2000
			EP	0998772 A1		10-05-2000
			JP	2002512735 T		23-04-2002
			NZ	337412 A		01-02-2002
			US	6201820 B1		13-03-2001
			WO	9839826 A1		11-09-1998
			US	6084894 A		04-07-2000